

What is claimed is:

1. An implantable lead assembly comprising:
 - a lead body extending from a proximal end to a distal end having an intermediate portion therebetween, wherein the lead body includes an insulating layer;
 - a conductor disposed within the insulating layer, wherein the insulating layer surrounds the conductor;
 - an electrode coupled to the lead body, wherein the electrode is in electrical communication with the conductor; and
 - at least one conductive sleeve disposed within the insulating layer, the at least one conductive sleeve surrounds the conductor, wherein the at least one conductive sleeve is electrically isolated from the electrode, the at least one conductive sleeve has a first impedance value in a first condition.
2. The implantable lead assembly of claim 1, wherein the at least one conductive sleeve is exposed to a surrounding environment in a second condition and the at least one conductive sleeve has a second impedance value, where the second impedance value is within a predetermined range.
3. The implantable lead assembly of claim 2, wherein an opening extends from an outer surface of the insulating layer to the at least one conductive sleeve to expose the at least one conductive sleeve to the surrounding environment.
4. The implantable lead assembly of claim 1, wherein the at least one conductive sleeve extends through the lead body, and the at least one conductive sleeve is substantially aligned with a lead body longitudinal axis.

5. The implantable lead assembly of claim 1, further comprising:
a second conductive sleeve disposed within the insulating layer, wherein the second conductive sleeve is electrically isolated from the electrode.
6. The implantable lead assembly of claim 5, wherein the second conductive sleeve surrounds the conductor and the at least one conductive sleeve.
7. The implantable lead assembly of claim 6, wherein the insulating layer includes a first portion, a second portion, and a third portion, the at least one conductive sleeve is interposed between the first portion and the second portion, and the second conductive sleeve is interposed between the second portion and the third portion, the third portion surrounds the second conductive sleeve.
8. The implantable lead assembly of claim 5, further comprising:
a second conductor, the second conductor disposed within the insulating layer, wherein the second conductive sleeve surrounds the second conductor.
9. The implantable lead assembly of claim 1, further comprising:
a pulse generator coupled with the implantable lead assembly, wherein the pulse generator is in electrical communication with the at least one conductive sleeve.
10. The implantable lead assembly of claim 9, further comprising:
a monitoring unit coupled with the implantable lead assembly, wherein the monitoring unit is in electrical communication with the at least one conductive sleeve.

11. An implantable lead assembly comprising:
 - a lead body extending from a proximal end to a distal end having an intermediate portion therebetween, wherein the lead body includes an insulating layer;
 - a conductor disposed within the insulating layer, wherein the insulating layer surrounds the conductor;
 - an electrode coupled to the lead body, wherein the electrode is in electrical communication with the conductor; and
 - means for detecting wear of the insulating layer, wherein the means for detecting wear is disposed within the insulating layer.
12. The implantable lead assembly of claim 11, wherein the means for detecting wear of the insulating layer includes a conductive sleeve disposed within the insulating layer.
13. The implantable lead assembly of claim 11, wherein the means for detecting wear of the insulating layer is in contact with a surrounding environment.
14. A method comprising:
 - measuring a first impedance of an at least one conductive sleeve at a first time in an implantable lead assembly, the implantable lead assembly including a lead body having a conductor disposed therein, an electrode coupled to the lead body and in electrical communication with the conductor, an insulating layer surrounds the conductor, and the at least one conductive sleeve is disposed within the insulating layer and surrounds the conductor;
 - measuring a second impedance of the at least one conductive sleeve at a second time; and

sending a signal if the second impedance is within a predetermined range.

15. The method of claim 14, further comprising:
comparing the first impedance with the second impedance.
16. The method of claim 14, further comprising:
wearing away the insulating layer during an intermediate period between the first time and the second time.
17. The method of claim 14, further comprising:
coupling the implantable lead assembly to a pulse generator, wherein the pulse generator is in electrical communication with the at least one conductive sleeve.
18. The method of claim 17, wherein measuring the first impedance and measuring the second impedance are performed by the pulse generator.
19. The method of claim 17, further comprising:
storing the impedance measurements within the pulse generator.
20. The method of claim 14, further comprising:
coupling a monitoring unit to a terminal disposed on the lead body wherein the monitoring unit is in electrical communication with the at least one conductive sleeve.
21. The method of claim 20, wherein measuring the first impedance and measuring the second impedance are performed by the monitoring unit.

22. The method of claim 14, wherein measuring the first impedance and measuring the second impedance includes measuring impedance at preprogrammed times.

23. The method of claim 14, wherein measuring the first impedance and measuring the second impedance are performed intermittently.